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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/918,005	07/30/2001	Markus Gross	A34695 071308.0192	9747
31625	7590	03/31/2006	EXAMINER PHAN, TRI H	
BAKER BOTTS L.L.P. PATENT DEPARTMENT 98 SAN JACINTO BLVD., SUITE 1500 AUSTIN, TX 78701-4039			ART UNIT 2616	PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 09/918,005	<b>Applicant(s)</b> GROSS ET AL.	
	<b>Examiner</b> Tri H. Phan	<b>Art Unit</b> 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 16 November 2005.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) \_\_\_\_\_ is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 32-35, 37-40 and 43-46 is/are rejected.
- 7)  Claim(s) 36, 41 and 42 is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a)  All    b)  Some \*    c)  None of:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 3/22/2005.
- 4)  Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Election/Restrictions***

1. This Office Action is a response to the Non-compliant Response dated 11/6/2005. Claims 17-46 are pending in the application. Claims 1-16 are cancelled, claims 17-31 are withdrawn, and new claims 32-46 are added. In a response to this Office Action Applicant should cancel the non-elected claims to expedite the prosecution, should the response place the instant application in a favorable condition for allowance.

### ***Priority***

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Germany on 9/27/2000. It is noted, however, that applicant has not filed a certified copy of the "100 479 25.1" application as required by 35 U.S.C. 119(b).

### ***Information Disclosure Statement***

3. The information disclosure statement filed 3/22/2005 ("The Fibre Distributed Data Interface 'FDDI' a New Generation Standard for Local Area Networks", by Sastry et al.; PROC IEEE, June 13, 1988, page 239-242) fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each non-patent literature publication or that portion which caused it to be listed;

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and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

### *Claim Objections*

4. Claim 32-46 are objected to because of the following informalities:

Applicant is respectfully suggested to be consistent in using terminologies, for example in claim 32, it recites "A method for real-time communication ... using Ethernet physics, wherein a master unit and one or more slave units ... wherein the messages ... wherein access control .... respective timeslot."

It is unclear if applicant intends for claims 32-43 to be directed towards a method claim or towards an apparatus claim. Claims 32-43 provide a method for use of real-time communication, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass.

Same objection's reason for claim 44, which recites "A method for real-time communication ... with Ethernet physics,

wherein a majority of network subscribers ... slave units, wherein the network subscribers .... or via a network node according to claim 32.", which provides a method for use of real-time communication, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass.

Claim 45 recites "A communication system for performing ... the method according to claim 32.", but, since the claimed recitation 32 does not set forth any active, positive steps involved in the process; the examiner is unclear what step(s) of the method (claim 32) is(are) intending to encompass in the claimed invention of claim 45.

Same objection's reason for claim 46, which recites "A distributed drive system ... to perform the method according to claim 32, ....slave units."; where the examiner is unclear what step(s) of the method (claim 32) is(are) intending to encompass in the claimed invention of claim 45.

Appropriate correction are required.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 32-35, 37-40, and 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fellman et al.** (U.S.6,215,797; hereinafter refer as '**Fellman**') in view of **Kölblin et al.** (U.S.6,516,364; hereinafter refer as '**Kölblin**').

- In regard to claim 32, Fellman discloses, *a method for real-time communication between a number of network subscribers in a communication system using Ethernet physics* (for example see figure 2), *wherein a master unit ('master device'; for example see col. 8, lines 20-25) and one or more slave units ('slave devices'; for example see col. 8, lines 30-31) communicate with one another by means of messages ('synchronization signal') which are transmitted via the communication system, wherein the messages are interchanged cyclically with equidistant sampling times, in that each slave unit is synchronized to the master unit by means of a common timebase* (for example see col. 8, lines 22-29 wherein the intervals or 'frames' are subdivided into several time slots or 'phases', e.g. "*cyclically with equidistant sampling times*", for carrying the synchronization signal to each slave device to synchronize the local clock with the intervals or common time reference, e.g. "common timebase", as disclosed in col. 4, line 66 through col. 5, line 2; col. 8, lines 20-29) *and wherein access control ('arbitration mechanism') for the transmission mode and reception mode is carried out between the network subscribers using a timeslot access method* (for example see col. 7, lines 10-16 where the "*timeslot access method*" is provided through the CSMA/CD as disclosed in col. 7,

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lines 36-39 or other methods as disclosed in col. 24, lines 17-23). Fellman does disclose, *wherein each slave unit is assigned at least one respective timeslot* (for example see figure 4 wherein each DA is assigned to respective phase, e.g. “*timeslot*”, in the frame) *and wherein the master unit transmits the synchronization information including a predefined start time* (for example see col. 8, lines 22-29); but fails to teach *wherein the respective synchronization information including a predefined start time for each slave unit of the at least one respective timeslot*. However, such implementation is known in the art.

For example, Kölblin discloses, *wherein the master unit* (‘adaptation module’ in figure 1) *transmits the respective synchronization information* (‘synchronization message’) *to each slave unit including a predefined start time for each of the at least one respective timeslot* (for example see figure 2; col. 2, line 62 through col. 3, line 6; wherein the predetermined phase shift with respect to the start of the cycle time, e.g. “*predefined start time*”, is transmitted to each data transmitter, e.g. “*slave unit*”, by the adaptation module, e.g. “*master unit*”).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the use of individual synchronization message for each data transmitter as taught by Kölblin into each phase of the frame of the Fellman’s system, with the motivation being to improve the data transmission in a time-coordinated manner while avoiding overload situations as disclosed in Kölblin: col. 1, lines 40-43.

- Regarding claim 33, Fellman further discloses, *each slave unit being timed by way of a respective counter* (‘local clock’) *with a preassigned total cycle time* (‘regular intervals’), *the respective counter being set cyclically by reception of the respective slave-specific*

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*synchronization information determined by the master unit* ('synchronization signal'; for example see col. 8, lines 30-36 wherein the slave device's local clock is adjust based on the master device's synchronization signal with the drift time, e.g. "*respective slave-specific synchronization information*").

- In regard to claims 34 and 35, Fellman does disclose about the transmitted synchronization signal through the intervals or 'frames'; but fails to explicitly disclose, *wherein the respective synchronization information being integrated and transmitted by way of a data telegram and/or a synchronization telegram*. However, such implementation is known in the art.

For example, Kölblin discloses about the transmitted synchronization message to each data transmitter ("*telegram*"; for example see col. 2, lines 62-66).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the transmission of synchronization message for each data transmitter as taught by Kölblin into the Fellman's synchronization signal, with the motivation being to improve the data transmission in a time-coordinated manner while avoiding overload situations as disclosed in Kölblin: col. 1, lines 40-43.

- Regarding claim 37, Fellman further discloses, *wherein the predefined start times being transmitted during an initialization, during which the master unit exclusively has authorization to transmit on the communications system and each slave unit exclusively has authorization to answer* (for example see col. 8, lines 15-29; wherein the synchronization signal transmitted from the master device defines the common time reference, where the slave device has the right to

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transmit packet on the network as disclosed in figure 4; col. 8, lines 15-19, e.g. “*authorization to answer*”).

- In regard to claims 38-39, Fellman further discloses, *wherein each slave unit being notified of the respective start times during initialization* (for example see col. 8, lines 30-36 wherein, it is obvious that the start time of the time reference with the drift measurement are the “*respective start time*” for the slave device). Fellman also discloses, *wherein current instantaneous values are stored in each slave unit at a common point of time* (for example see col. 8, lines 30-36 wherein the drift measurement with respect to the start time of the time reference, e.g. “*current instantaneous values*”, stores in the slave device’s local clock).

- Regarding claim 40, Fellman further discloses, *wherein each slave unit in each telegram sends a signal to the master unit and the master unit, in the absence of said signal, controlledly stops the corresponding slave unit* (for example see col. 9, line 63 through col. 10, line 5; wherein the master device assigns the phases or time slots for the device adapters based on the device’s request and on line; otherwise, the device adapter is de-allocated, e.g. “*controlledly stops the corresponding slave unit*”, if not active as disclosed in col. 23, line 66 through col. 24, line 4).

- In regard to claim 43, the combination of Fellman and Kölblin fails to disclose, *wherein separate transmission and reception lines between two network subscribers are used simultaneously, in that all slave units will transmit only in the direction towards the master unit,*



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*and receive telegrams only from the master unit from the master direction.* However, using different lines for transmitting and receiving data, e.g. full duplex, is well known in the art in the telecommunication technique.

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the use of different lines for transmitting and receiving data, e.g. full duplex, for providing more bandwidth guarantees and quality of service for data transmission as with design choices.

- Regarding claims 44-45, the combination of Fellman and Kölblin further discloses, *a method of real time communication between network subscribers to several communication systems with Ethernet physics, wherein a majority of network subscribers having a circuit part (for example see Fellman: figure 3) to form network nodes, serving to pass along the telegrams towards another master unit or additional slave units, wherein the network subscribers communicating with each other directly within each communication system or via a network node according to claim 32 or method according to claim 32 (for example see Fellman: figure 2; with the rejection of the method claim 32 discussed above).*

- In regard to claim 46, the combination of Fellman and Kölblin further discloses, *a distributed drive system with hierarchical network operable to perform the method according to claim 32, the system comprising a first communication system including a numeric motion control as master unit ('master device') and at least one regulating unit as slave unit (for example see Fellman: figure 2; with the rejection of the method claim 32 discussed above), each*

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*regulating unit serving as master unit of an additional communication system comprising at least one power part to trigger a motor and an associated emitter system as slave units* (wherein the device adapter or “*slave unit*” is used for connecting and triggering the real-time devices or non-real-time devices, e.g. “*additional communication system*”); but fails to teach about “*motor*” and “*associated emitter system*”. However, depend on systems and design choices, it is obvious that the method of claim 32 can be used for control, e.g. “*trigger*”, the designed “*motor*” and “*associated emitter system*”, instead of real-time and non-real-time devices.

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to implement the use of method of claimed invention 32 for controlling , e.g. “*trigger*”, the designed “*motor*” and “*associated emitter system*” as with design choices in designed system.

#### ***Allowable Subject Matter***

7. Claims 16, 24 and 31 would be allowable if rewritten or amended to overcome the objection, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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**Tan, Yoichi** (U.S.4,502,137) and **Wilson et al.** (U.S.5,974,056) are all cited to show devices and methods for improving the digital data transmission with the clock synchronization in the telecommunication architectures, which are considered pertinent to the claimed invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

**Any response to this action should be mailed to:**

**Commissioner of Patents and Trademarks**

Washington, D.C. 20231

**or faxed to:**

**(571) 273-8300**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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Tri H. Phan  
March 28, 2006



CHI PHAM  
SUPERVISORY PATENT EXAMINER

3/29/06